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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,375	07/28/2000	Huan-Yu Su	01827.0018.00US00	2740

25700 7590 04/22/2004

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EXAMINER

HAN, QI

ART UNIT PAPER NUMBER

2654

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/627,375	Applicant(s) SU, HUAN-YU
Examiner Qi Han	Art Unit 2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 March 2004.
- 2a) This action is FINAL.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3,7,9-11,28-30 and 35-37 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,7,9-11,28-30 and 35-37 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/2/2004 has been entered.

Response to Amendment

2. The Applicant(s) amended claims 1, 3, 9, 28, 30 and 35, cancelled claims 4-6, 8 and 31-34 (see paper 19, pages 2-6), and filed the RCE examination request (Paper 18) on 3/2/2004.

Response to Arguments

3. Applicant's arguments with respect to claims 1-3, 7, 9-11, 28-30 and 35-37 (paper 19, page 6-7) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-3, 7, 9-11, 28-30 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolik et al. (USPN 6,501,736), hereinafter referenced as Smolik, in view of Bender et al. (USPN 6,002,933) hereinafter referenced as Bender, and further in view of Tiedemann et al. (USPN 6,335,922) hereinafter referenced as Tiedemann.

Regarding **claim 1**, Smolik discloses a system for increasing the call capacity of a wireless communication system, such as CDMA system (column 5, line 10) using one of three speech coding (voice coding) algorithms supporting **variable transmission rate** (column 5, lines 24-53), which corresponds to the claimed “a flexible variable rate vocoder for use in a network to process signals, the vocoder having a plurality of output rates”, comprising:

a rate determination module configured to select a target average data rate based on at least one network parameter and at least one external parameter, (column 5, lines 54-55, ‘the variable rate (corresponding to a target average data rate) is based upon the speech characteristics of the input to the speech coder (vocoder)’; column 6, lines 1-10, ‘a command may be issued to the speech coder’, which can equivalently interpreted as a network parameter or external, since network parameter and outside control/data signal are all external parameters to the vocoder);

a rate implementation module configured to select between the plurality of output rates for coding outgoing frames of the signals to achieve an average output rate for the outgoing frames”, (column 6, lines 1-68 (including three rate tables), ‘speech coding algorithm provide a provision . . . , causing the distribution of **different rate** packets to be modified’, which can be used for selecting transmission (average output) rates);

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wherein a plurality of service classes comprise a premium class, a standard class and an economic classes, (column 2, lines 24-30, 'each mobile subscriber unit may be associated with an individual level of quality of service', 'a wireless communication system may offer both "premium" service and "basic" service, with "premium" service providing better perceived voice quality to the mobile subscriber unit under peak call durations', and 'the number of levels of QoS is not limited to two'),

wherein the network has a plurality of users, each user of the plurality of users having a desired service class from the plurality of service classes, and wherein if the network cannot accommodate a service demand by one of the plurality of users, the target average data rates associated with the standard class and the economy class are reduced to accommodate the service demand, (column 1, line 59 to column 2, line 5, 'adjusting the transmission rate of the speech coder at the mobile subscriber unit and/or the speech coder that may be located at the mobile switching center so that the call carrying capacity of the wireless communications system is therefore increased', 'the situation of call blocking is monitored to determine if frame error rate targets should be adjusted to further increase the call capacity'; column 9, lines 47-56, 'the service provider can choose a maximum level of QoS that is subjected to a service degradation as a result of the call capacity enhancement process, thus only those mobile subscriber units having a level of QoS less or equal to the maximum level of QoS will be affected by the call capacity enhancement process, and of course, the maximum level of QoS can be set so that all mobile subscriber units are affected by the process').

But, Smolik fails to specifically disclose the average output rate "determined over a predetermined time period" and being "approximately equal to the target average data rate."

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However, this feature is well known in the art as evidenced by Bender, who discloses that the traffic level is determined based on link load messages received periodically by the admission control subsystem that are generated by an interface port coupled to an interconnect between the first cellular telephone system and the second cellular telephone system (column 3, lines 30-34). Bender further teaches that to allow admission control subsystem 44 (Fig. 2) to properly monitor the traffic transmitted through BCN (base station communication network) port 32f, BCN port 32f transmits link load messages to admission control subsystem 44, and the link load messages are transmitted periodically at a period $T_{\text{SampleLoad}}$ and **indicate the average frame reception rate R_{ave}** of BCN port, wherein R_{ave} is the total number of good frames received by BCN port 32f from BSC 24B during the previous period $T_{\text{SampleLoad}}$ divided by the duration of the period $T_{\text{SampleLoad}}$ (column 5, lines 52-63). Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Smolik by specifically providing a mechanism of determining an average rate based on a predetermined time period, as taught by Bender, for the purpose of improving operating a cellular telephone system (Bender: column 3, line 16).

Even though, Smolik discloses inputting some external information to the speech coder (vocoder) and that the service demand is determined based on the desired service class (level of QoS) of the one user, as stated above, Smolik in view of Bender fails to specifically disclose that “wherein one of the at least one network parameter is **indicative of an available network capacity**, and one of the at least one external parameter is **indicative the subject matter of the signal**” and “the service demand is determined based on [at] the desired service class of the one user and the subject matter of the signal”. However, these features are well known in the art as

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evidenced by Tiedemann, who discloses that when the cell has a large amount of data to transmit to station the channel scheduler collects information including the variable forward link capacity (indicative of an available network capacity) for each cell in the network and other parameters, and schedules the high speech data transmission by allocating a resource to the remote station (including vocoder) and selecting a set of secondary code channels corresponding to an assigned transmission rate (column 4, line 67 to column 5, line 7). Tiedemann further teaches optimizing utilization of the forward link by allocating the available resource to users that are assigned a priority based on a set of factor, including the amount of data to be transmitted and the type of data (equivalent to subject matter of the signal) (column 5, lines 27-38). Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify Smolik in view of Bender by specifically providing parameters indicating an available network capacity and data type (the subject matter of the signal) and using them for determining a user priority (corresponding to service demand), as taught by Tiedemann, for the purpose of optimizing system performance (Tiedemann: column 5, lines 27-28).

Regarding **claim 2** (depending 1), Smolik in view of Bender in view of Tiedemann discloses further discloses that the plurality of output rates include a full rate, a half rate, a quarter rate, and a eighth rate (Smolik: column 5, lines 64-66).

Regarding **claim 3** (depending 1), Smolik in view of Bender in view of Tiedemann discloses further discloses that “another one of the at least one external parameter is indicative of one of a plurality of service classes”, (Smolik: column 2, lines 13-24, ‘the criteria include, but are not limited to: total power (network parameter), frame error rate and quality of service (QoS) associated with specific mobile subscriber units’; column 2, lines 24-25, ‘each mobile subscriber

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unit may be associated with an individual level of quality of service (external parameter)'; Tiedemann: column 5, lines 29 and 35, 'priorities', 'type of data service', corresponding to service classes).

Regarding **claim 7** (depending 1), Smolik in view of Bender in view of Tiedemann further discloses various procedures, processes and table structures relating to the rate deduction (Smolik: column 5, line 60 through column 10, line 35), so that the system inherently includes a mechanism that is capable of implementing or equivalent to the functionality as the claimed "the rate implementation module comprises a switch, a full rate module, a half rate module, a quarter rate module, an eighth rate module, and a multiplexor, and wherein the switch selects between the nodules for coding each of the outgoing frames, and the multiplexor receives the outgoing frames from each of the modules and serially outputs the outgoing frames on a single line."

Regarding **claim 9** (depending 1), the rejection for claim 1 (as stated above) also satisfies the claimed "the subject matter can be one of voice category, data category, music category, and image video category", which corresponds to "type of data", wherein data, except voice data, can be broadly interpreted as non-voice data, including text, music and image, because vocoder itself does not encode/decode this type of data.

Regarding **claim 10** (depending 9), Smolik in view of Bender in view of Tiedemann further discloses that in CDMA system, if call blocking is detected in the wireless communications system it may be acceptable to degrade voice quality of the communications connections within a predetermined limit in order to increase the efficiency of the available RF spectrum as measured by the call carrying capacity of this allocated RF spectrum; this is accomplished by adjusting the transmission rate of the speech coder at the mobile subscriber unit

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and/or the speech coder that may be located at the mobile switching center so that the call carrying capacity of the wireless communications system is therefore increased; additionally, the situation of call blocking is monitored to determine if frame error rate targets should be adjusted to further increase the call capacity (Smolik: column 1, line 59 to column 2, line 5). Furthermore, Smolik discloses that the service provider can choose a maximum level of QoS that is subjected to a service degradation as a result of the call capacity enhancement process, thus only those mobile subscriber units having a level of QoS less or equal to the maximum level of QoS will be affected by the call capacity enhancement process, and of course, the maximum level of QoS can be set so that all mobile subscriber units are affected by the process (Smolik: column 9, lines 47-56). This corresponds to the claimed “wherein the network has a plurality of users, if the network cannot accommodate a service demand by one of the plurality of users at the target average data rate, the target average data rates associated with one or more categories of the subject matter are reduced to accommodate the service demand.”

Regarding **claim 11** (depending 9), Smolik in view of Bender in view of Tiedemann further discloses that at times when the wireless system is not experiencing peak usage, the voice quality is restored to normal levels (Smolik: column 2, lines 5-7), and the service provider can choose a maximum level of QoS that is subjected to a service degradation as a result of the call capacity enhancement process, thus only those mobile subscriber units having a level of QoS less or equal to the maximum level of QoS will be affected by the call capacity enhancement process, and of course, the maximum level of QoS can be set so that all mobile subscriber units are affected by the process (Smolik: column 9, lines 47-56), which suggest that when there is available capacity the system is capable of increasing service level for all users. This

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corresponds to the claimed “wherein the network has a plurality of users, if the network can accommodate a service demand by one of the plurality of users at the target average data rate, the target average data rates associated with one or more categories of the subject matter are increased.”

Regarding **claims 28-30 and 35-37**, they recite a method for use by a flexible variable rate vocoder in a network. The rejection is based on the same reason as described for claims 1-3 and 9-11 respectively, because claims 28-30 and 35-37 recite same or similar limitation(s) as claims 1-3 and 9-11, respectively.

Conclusion

6. Any response to this office action should be mailed to:
Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA22313-1450
or faxed to:
(703)-872-9314
Hand-delivered responses should be brought to:
Crystal Park II, 2121 Crystal Drive, Arlington. VA. Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7: p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Richmond Devil, can be reached on (703) 305-6954.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

QH/qh
April 15, 2004


RICHMOND DORVIL
SUPERVISORY PATENT EXAMINER